## Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

## Listing of Claims

1. (Previously Presented) An optical pulse waveform converter, comprising:

an optical pulse input port configured to receive an input optical pulse;

a nonlinear optical element configured to broaden a wavelength content of an optical pulse routed through said nonlinear optical element;

a dispersive optical element separate from said nonlinear optical element and configured to modify a temporal profile of an optical pulse routed through said dispersive optical element;

a wavelength selecting optical element configured to pass selected wavelength components of an optical pulse routed through said wavelength selecting optical element; and

an optical pulse output port configured to output an optical pulse comprising different optical characteristics than said input optical pulse, wherein

the non-linear optical element, the dispersive optical element, and the wavelength selecting optical element connect the optical pulse input port to the optical pulse output port, and

the non-linear optical element, the dispersive optical element, and the wavelength selecting optical element are directly connected to one another according to one of a plurality of predetermined arrangements.

2. (Previously Presented) The waveform converter of Claim 1, wherein said nonlinear element and said dispersion element comprise:

a plurality of optical fibers having different nonlinear coefficients; and

a plurality of optical fibers having different dispersion characteristics.

3. (Original) The waveform converter of Claim 2, wherein said optical fibers having different nonlinear coefficients are alternately disposed with said optical fibers having different dispersion characteristics.

4. (Original) The waveform converter of Claim 2, wherein said optical fibers differ in length.

5. (Previously Presented) The waveform converter of Claim 1, wherein said nonlinear element comprises:

a highly nonlinear optical fiber having a nonlinear coefficient of 5.0 $W^{-1}km^{-1}$ or larger.

6. (Previously Presented) The waveform converter of Claim 1, further comprising:

at least one optical amplifier.

7. (Original) The waveform converter of Claim 1, wherein said dispersive optical element and said wavelength selecting optical element are combined in a single optical medium.

8. (Previously Presented) The waveform converter of Claim 7, wherein said single optical medium comprises:

a chirped fiber Bragg grating.

9. (Original) The waveform converter of Claim 1, wherein said coupled optical elements are coupled in the order of input port, nonlinear optical element, dispersive optical element, wavelength selecting optical element, output port.

10. (Original) The waveform converter of Claim 1, wherein said coupled optical elements are coupled in the order of input port, dispersive optical element, nonlinear optical element, wavelength selecting optical element, output port.

11. (Previously Presented) The waveform converter of Claim 1, wherein said wavelength selecting element comprises:

a fiber grating.

12. (Previously Presented) The waveform converter of Claim 1, wherein said wavelength selecting element comprises:

a bandpass filter.

13. (Previously Presented) A device configured to modify an optical signal having a pulse waveform, said device comprising:

means for exerting a nonlinear effect on said pulse waveform;

means for exerting a dispersion effect on said pulse waveform; and

means for changing an optical spectrum profile of said pulse waveform, wherein said means for exerting a nonlinear effect, means for exerting a dispersion effect, and said means for changing an optical spectrum profile are directly coupled in one of a plurality of predetermined arrangements.

14 - 23. (Cancelled)

24. (Previously Presented) An optical pulse light source, comprising:

a modulated signal light source having output pulses characterized by a temporal waveform and a wavelength content; and

a waveform converter coupled to receive said output pulses from said signal light source and including

a nonlinear optical element,

a dispersive optical element separate from said nonlinear optical element, and

a wavelength selecting optical element, wherein

said waveform converter is configured to output optical pulses which have different wavelength content than said optical pulses output from said signal light source, and

the non-linear optical element, the dispersive optical element, and the wavelength selecting optical element are directly connected to one another according to one of a plurality of predetermined arrangements.

25. (Original) The light source of Claim 24, wherein said output optical pulses from said waveform converter have a center wavelength closer to 1550 nm than the center wavelength of said modulated signal light source output pulses.

26. (Previously Presented) A device configured to produce a optical pulses for optical amplification and communication, said device comprising:

a laser configured to produce a modulated light signal output; and

a waveform converter having said light signal output as an input, said waveform converter including:

a nonlinear optical element configured to broaden a wavelength content of an optical pulse routed through said nonlinear optical element;

a dispersive optical element configured to modify a temporal profile of an optical pulse routed through said dispersive optical element; and

a wavelength selecting optical element configured to pass selected wavelength components of an optical pulse routed through said wavelength selecting optical element, wherein

the non-linear optical element, the dispersive optical element, and the wavelength selecting optical element are directly connected to one another according to one of a plurality of predetermined arrangements.

27. (Previously Presented) A method of changing the wavelength content of a first optical pulse, wherein said first optical pulse has an optical spectrum centered at a first wavelength, said method comprising:

sequentially spreading a wavelength profile and a temporal profile of the optical spectrum of said first optical pulse in two separate and directly connected optical devices to produce a spread optical spectrum;

selecting with a third optical device directly connected to said two separate and directly connected optical devices a second wavelength from said spread optical spectrum; and

filtering wavelengths outside of a selected wavelength band around said second wavelength band so as to produce a second optical pulse having an optical spectrum centered approximately at said second wavelength.